

WHAT IS CLAIMED:

1           1.    A navigation system for a vehicle that  
2 provides routing information while traversing a route,  
3 comprising:

4           a data processor having a database of routing  
5 information over which a land vehicle may travel, the data  
6 processor being programmable with a starting point and a  
7 destination point, the data processor being provided with  
8 user preference data, the data processor being provided with  
9 realtime parameters that are used in providing previously  
10 selected route between the starting point and the  
11 destination point that is selected prior to beginning  
12 traversing the route;

13          a global positioning system (GPS) providing a set  
14 of current location data corresponding to the current  
15 location of the vehicle;

16          the data processor providing an alternative route  
17 to the destination point based upon the set of current  
18 location data, user preference data and a set of updated  
19 realtime parameters that provides the user with the  
20 alternative route while traversing the previously selected  
21 route.

1           2.    The navigation system of claim 1 wherein the  
2 user preference data comprises criteria such as shortest  
3 time, shortest distance, maximizing use of freeways,  
4 minimizing use of freeways, maximizing use of toll roads,  
5 and minimizing use of toll roads.

1           3.    The navigation system of claim 1 wherein the  
2 set of real time parameters comprises traffic data, weather  
3 data, train schedule data, draw bridge schedule data,  
4 construction zone data, and special event data, that are

5 used by the data processor depending upon availability in  
6 calculating an alternate route, comparing the previously  
7 selected route to the alternate route, and providing  
8 information to driver to evaluate and select between the  
9 previously selected route and the alternate route repeatedly  
10 in response to each update of the real time parameters while  
11 traveling along the selected route.

1 4. The navigation system of claim 3 wherein the  
2 information provided to the driver to evaluate and select  
3 between the previously selected route and the alternate  
4 route is selectively provided only when the alternate route  
5 would provide a predetermined improvement in efficiency as  
6 measured by a selected parameter.

1 5. A method of navigating to a destination  
2 utilizing a data processing system:  
3 inputting a starting location;  
4 inputting a destination location;  
5 inputting a set of real time parameters;  
6 inputting a set of user preferences;  
7 calculating at least one route from the starting  
8 point to the destination including factoring in the effect  
9 of the real time parameters and user preferences;  
10 selecting one of the routes and traveling along a  
11 selected route toward the destination;  
12 updating the set of real time parameters to create  
13 an updated set of real time parameters while traveling along  
14 the selected route;  
15 calculating an alternate route from an  
16 intermediate location to the destination location based upon  
17 the updated set of real time parameters;  
18 comparing the selected route to the alternate  
19 route; and

20 providing information to driver to evaluate and  
21 choose between the selected route and the alternate route,  
22 the choice of the driver thereafter being the selected route  
23 for the continuation of traveling to the destination  
24 location.

1 6. The method of navigating to a destination of  
2 claim 5 wherein the steps of updating the set of real time  
3 parameters, calculating an alternate route, comparing the  
4 previously selected route to the alternate route, are  
5 repeated in response to each update of the real time  
6 parameters while traveling along the selected route and the  
7 step of providing information to driver to evaluate and  
8 select between the previously selected route and the  
9 alternate route is repeated upon receiving a request from  
10 the user or when the alternate route would provide a  
11 predetermined degree of improvement in efficiency in  
12 reference to at least one selected user preference.

1 7. The method of navigating to a destination of  
2 claim 6 wherein the step of providing information to the  
3 user is repeated only when the alternate route results in a  
4 reduction of the time of travel from the intermediate  
5 location to the destination location.

1 8. The method of navigating to a destination of  
2 claim 6 wherein the step of providing information to the  
3 user is repeated only when the alternate route results in a  
4 reduction of the cost of travel from the intermediate  
5 location to the destination location.

1           9.    The method of navigating to a destination of  
2 claim 5 wherein the realtime parameters are selected from  
3 the group consisting essentially of:

4           traffic data;  
5           weather data;  
6           train schedule data;  
7           draw bridge schedule data;  
8           construction zone data; and  
9           special event data.

1           10.   The method of navigating to a destination of  
2 claim 5 wherein the real time parameters are data that may  
3 be provided to the data processor that could impact the time  
4 or cost of travel to the destination location.

1           11.   The method of claim 5 wherein the starting  
2 location and intermediate location are input from a global  
3 positioning system.